CLAIMS

We Claim:

1. A method for reducing occurrence of spurs when analyzing signals, the method comprising:

mixing a first signal with a local oscillator signal to produce an intermediate signal, including the following:

when a spur is predicted to occur when high side mixing is performed, performing low side mixing, and

when a spur is predicted to occur when low side mixing is performed, performing high side mixing.

2. A method as in claim 1, wherein mixing the first signal additionally comprises the following:

when a spur is predicted to occur when high side mixing is performed and a spur is predicted to occur when low side mixing is performed, and the spur that is predicted to occur when high side mixing is performed is greater than the spur that is predicted to occur when low side mixing is performed, performing low side mixing, and

when a spur is predicted to occur when high side mixing is performed and a spur is predicted to occur when low side mixing is performed, and the spur that is predicted to occur when high side mixing is performed is less than the spur that is predicted to occur when low side mixing is performed, performing high side mixing.

3. A method as in claim 1 wherein the first signal is a result of mixing an external oscillator signal with another signal, and a spur is predicted to occur when a harmonic of the local oscillator signal interferes with a harmonic of the external oscillator signal.

4. A method as in claim 1 wherein the first signal is an intermediate signal within a network analyzer, and a spur is predicted to occur when a harmonic of the local oscillator signal interferes with a harmonic of an external oscillator signal.

5. A method as in claim 1 wherein the first signal is an intermediate signal within a network analyzer, and a spur is predicted to occur when a harmonic of a second local oscillator signal within the network analyzer interferes with a harmonic of an external oscillator signal.

6. A method as in claim 1 wherein spur prediction takes into account fundamentals, harmonics, and mixed products of a multitude of known external interfering sources.

7. A signal analyzer comprising:

an input that receives an input signal; and,

a first converter system, the first converter system including:

a first local oscillator that produces a first local oscillator signal, and

a first converter that mixes the input signal with the first local oscillator signal to produce a first intermediate signal, wherein when a spur is predicted to occur when the first converter system performs high side mixing, the first converter system performs low side mixing, and when a spur is predicted to occur when the first converter system performs low side mixing, the first converter system performs high side mixing.

8. A signal analyzer as in claim 7:

wherein when a spur is predicted to occur when the first converter system performs high side mixing and a spur is predicted to occur when the first converter system performs low side mixing, and the spur that is predicted to occur when the first converter system performs high side mixing is greater than the spur that is predicted to occur when the first converter system performs low side mixing, the first converter system performs low side mixing; and,

wherein when a spur is predicted to occur when the first converter system performs high side mixing and a spur is predicted to occur when the first converter system performs low side mixing, and the spur that is predicted to occur when the first converter system performs high side mixing is lesser than the spur that is predicted to occur when the first converter system

performs low side mixing, the first converter system performs high side mixing.

9. A signal analyzer as in claim 7 wherein a spur is predicted to occur when a harmonic of the first local oscillator signal interferes with a harmonic of an external oscillator signal used to generate the input signal.

10. A signal analyzer as in claim 7 wherein the signal analyzer additionally comprises:

a second converter system, the second converter system including:

a second local oscillator that produces a second local oscillator signal, and

a second converter that mixes the first intermediate signal with the second local oscillator signal to produce a second intermediate signal, wherein when a spur is predicted to occur when the second converter system performs high side mixing, the second converter system performs low side mixing, and when a spur is predicted to occur when the second converter system performs low side mixing, the second converter system performs high side mixing.

11. A signal analyzer as in claim 7 wherein the signal analyzer additionally comprises:

a second converter system, the second converter system including:

a second local oscillator that produces a second local oscillator signal, and

a second converter that mixes the first intermediate signal with the second local oscillator signal to produce a second intermediate signal, wherein a spur is predicted to occur when a harmonic of the second local oscillator signal interferes with a harmonic of an external oscillator signal used to generate the input signal.

12. A signal analyzer as in claim 7 wherein a spur is predicted to occur when a signal generated external to the signal analyzer interferes with a signal generated within the signal analyzer.

13. A signal analyzer as in claim 7 wherein spur prediction takes into account fundamentals, harmonics, and mixed products of a multitude of known external interfering sources.

14. A signal analyzer comprising:

input means for receiving an input signal; and,

first converter means for producing a first intermediate signal, the first converter means including:

first local oscillator means for producing a first local oscillator signal, and

first mixer means for mixing the input signal with the first local oscillator signal to produce the first intermediate signal, wherein when a spur is predicted to occur when the first converter means performs high side mixing, the first converter means performs low side mixing, and when a spur is predicted to occur when the first converter means performs low side mixing, the first converter means performs high side mixing.

15. A signal analyzer as in claim 14:

wherein when a spur is predicted to occur when the first converter means performs high side mixing and a spur is predicted to occur when the first converter means performs low side mixing, and the spur that is predicted to occur when the first converter means performs high side mixing is greater than the spur that is predicted to occur when the first converter means performs low side mixing, the first converter means performs low side mixing; and,

wherein when a spur is predicted to occur when the first converter means performs high side mixing and a spur is predicted to occur when the first converter means performs low side mixing, and the spur that is predicted to occur when the first converter means performs high side mixing is lesser than the spur that is predicted to occur when the first converter means performs low side mixing, the first converter means performs high side mixing.

16. A signal analyzer as in claim 14 wherein a spur is predicted to occur when a harmonic of the first local oscillator signal interferes with a harmonic of an external oscillator signal used to generate the input signal.

17. A signal analyzer as in claim 14 wherein the signal analyzer additionally comprises:

second converter means for producing a second intermediate signal, the second converter means including:

second local oscillator means for producing a second local oscillator signal, and

second mixer means for mixing the first intermediate signal with the second local oscillator signal to produce the second intermediate signal, wherein when a spur is predicted to occur when the second converter means performs high side mixing, the second converter means performs low side mixing, and when a spur is predicted to occur when the second converter means performs low side mixing, the second converter means performs high side mixing.

18. A signal analyzer as in claim 14 wherein the signal analyzer additionally comprises:

second converter means for producing a second intermediate signal, the second converter means including:

second local oscillator means for producing a second local oscillator signal, and

second mixer means for mixing the first intermediate signal with the second local oscillator signal to produce the second intermediate signal, wherein a spur is predicted to occur when a harmonic of the second local oscillator signal interferes with a harmonic of an external oscillator signal used to generate the input signal.

19. A signal analyzer as in claim 14 wherein a spur is predicted to occur when a signal generated external to the signal analyzer interferes with a signal generated within the signal analyzer.

20. A signal analyzer as in claim 14 wherein spur prediction takes into account fundamentals, harmonics, and mixed products of a multitude of known external interfering sources.